

REMARKS

INTRODUCTION:

In accordance with the foregoing, claims 3 and 4 have been amended. No new matter is being presented, and approval and entry are respectfully requested.

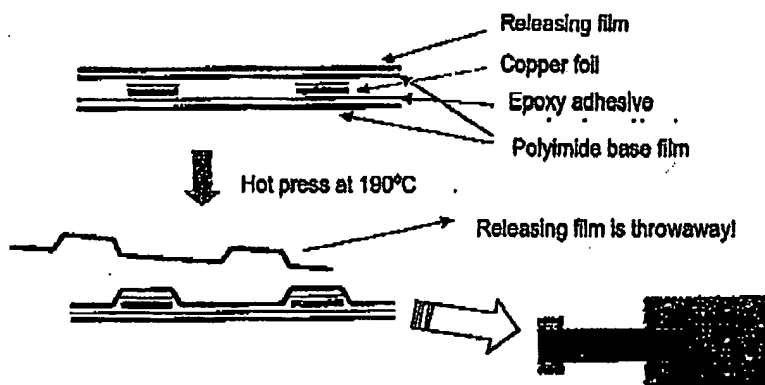
Claims 1-16 are pending and under consideration. Reconsideration is respectfully requested.

THE EXAMINER'S CLAIM ANALYSIS:

In the Office Action, at page 2, the Examiner argued that the phrase "for printed circuit board production" was merely a recitation of intended use.

It is respectfully submitted that the Examiner must consider a limitation of intended use, even assuming, *arguendo*, that the limitation does not provide any additional structure. As is clear from MPEP §2173.05(g), there is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971). "A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used," e.g., a functional limitation may be used to functionally define a particular capability or purpose that is served by the recited element.

Hence, it is respectfully submitted that "A mold releasing film for printed circuit board production" sets forth an essential requirement for defining the invention in accordance with the schematic process chart set forth below (provided for clarity):



OBJECTIONS TO THE CLAIMS:

In the Office Action, at page 2, claims 3 and 4 were objected to as not being descriptive.

Claim 3 has been amended to recite, in part: "wherein the resin layer (P) further contains (C) a compound containing a monovalent, divalent, trivalent or tetravalent metal-element."

Claim 4 has been amended to recite, in part: "wherein the monovalent, divalent, trivalent or tetravalent metal ~~element~~ comprises at least one of a-divalent Zn ~~element~~ and a-divalent Mg ~~element~~."

Hence, it is submitted that, in claim 3, the terminology "a compound containing a monovalent, divalent, trivalent or tetravalent metal" clearly indicates that the compound contains monovalent, divalent, trivalent or tetravalent metal atoms.

Similarly, in claim 4, the terminology "the monovalent, divalent, trivalent or tetravalent metal comprises at least one of divalent Zn and divalent Mg" is submitted to be clear.

It is respectfully submitted that, in view of the proposed amendments to claims 3 and 4 set forth above, the outstanding objections to claims 3 and 4 should be resolved.

REJECTION UNDER 35 U.S.C. §102:

A. In the Office Action, at page 3, claims 1-2, 8, and 13-16 were rejected under 35 U.S.C. §102(a) as being anticipated by Kamo, JP 2002241601. This rejection is traversed and reconsideration is requested.

The invention of Kamo is intended and directed to a sheet. Although the disclosure of the thickness (see paragraph [0038]) covers a broad range, one to be used in a printed circuit board is intended as described, for example in paragraph [0042].

Sheets used in printed circuit boards per se hardly possess the characteristics for a "mold releasing film for printed circuit board production." Therefore, the present application is distinct from the disclosure of Kamo.

Hence, it is respectfully submitted that Kamo teaches a sheet made of polyphenylene ether-based resin composition (see Abstract, Kamo, recited below for the convenience of the Examiner).

PROBLEM TO BE SOLVED: To provide a sheet made of a polyphenylene ether-based resin composition, excellent in flame retardance, gauge uniformity, insulating properties, tensile strength, and extensibility, having decreased anisotropy, and further excellent in tear strength. (emphasis added)

SOLUTION: This sheet made of the polyphenylene ether-based resin composition is formed from a resin composition which is obtained by adding (C) 0.1-30 pts.wt. of a flame retarded to 100 pts.wt. of a resin component comprising (A) 51-99.9 prt.wt. of a polyphenylene ether-based resin and (B) 0.1-49 pts.wt. of a liquid crystal polyester.

(emphasis added)

However, Kamo fails to teach a mold releasing film, as is disclosed by the present application. Since sheets used in printed circuit boards per se do not possess the characteristics for a “mold-releasing film for printed circuit board production,” Kamo does not teach or suggest the present application.

Hence, independent claim 1 is not anticipated under 35 U.S.C. §102(a) by Kamo, JP 2002241601. Since claims 2, 8, and 13-16 depend from independent claim 1, claims 2, 8, and 13-16 are not anticipated under 35 U.S.C. §102(a) by Kamo, JP 2002241601 for at least the reasons independent claim 1 is not anticipated under 35 U.S.C. §102(a) by Kamo, JP 2002241601.

B. In the Office Action, at page 3, claims 1, 8, and 13-15 were rejected under 35 U.S.C. §102(b) as being anticipated by Kohn, USPN 4,910,082. This rejection is traversed and reconsideration is requested.

The film of Kohn is produced by a method other than the melt molding method, so that it undergoes crystallization because of the use of a solvent. That is, the crystallization proceeds in the course of casting/polymer film formation after the filtering. Thus, the film is not substantially an “amorphous” molded article, as in the present application, and hence, is inferior in thermal shrinkage as is explained in the specification. Thus, the invention of Kohn is very distinct from the present application in this respect.

Hence, Kohn does not appear to teach or suggest a mold-release film, as is disclosed in the present application. In contrast, Kohn teaches a separatory application in which the film of Kohn is used as a drug release membrane to facilitate the controlled release of drugs (see col. 2, lines 22-25, Kohn).

The ultrathin polyphenylene oxide polymer film of Kohn has a thickness of about 400 Å or less (see Abstract, Kohn, set forth below for the convenience of the Examiner).

Disclosed herein are free-standing, pinhole-free, ultrathin, polyphenylene oxide films having thicknesses of about 400 angstroms or less and a process for preparing them. The films find particular utility in separatory applications.

Thus, the ultrathin polyphenylene oxide film of Kohn is about 0.04 µm or less, which is much thinner than the thickness of the mold-releasing film of the present application, which is about 50-300 µm for the multilayer film and about 3-100 µm for the monolayer film (see lines 12-20 of page 33 of the specification). That is, the ultrathin film of Kohn is purposely made ultrathin so that controlled release of drugs is possible, i.e., so that molecules may pass through the ultrathin film. In contrast, the multilayer film of the present application is 1250 to 7500 times

thicker than the film of Kohn, and the monolayer film of the present application is about 75 to 2500 times thicker than the film of Kohn, so that the film of the present application provides a stronger film for different purposes (see process chart above). Thus, the ultrathin film of Kohn is clearly not as strong as the multi-layer mold-releasing film of the present application due to the ultrathin property.

Hence, it is respectfully submitted that independent claim 1 is not anticipated under 35 U.S.C. §102(b) by Kohn, USPN 4,910,082. Since claims 8 and 13-15 depend from independent claim 1, claims 8 and 13-15 are not anticipated under 35 U.S.C. §102(b) by Kohn, USPN 4,910,082 for at least the reasons independent claim 1 is not anticipated under 35 U.S.C. §102(b) by Kohn, USPN 4,910,082.

REJECTION UNDER 35 U.S.C. §103:

A. In the Office Action, at pages 4-5, claims 3-6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kamo, JP 2002241601. The reasons for the rejection are set forth in the Office Action and therefore not repeated. The rejection is traversed and reconsideration is requested.

It is respectfully submitted that Kamo teaches a sheet made of polyphenylene ether-based resin composition (see above), and fails to teach a mold releasing film, as is disclosed by the present application. Thus, since sheets used in printed circuit boards do not possess the characteristics for a "mold-releasing film for printed circuit board production," Kamo does not teach or suggest independent claim 1 of the present application.

Hence, it is respectfully submitted that independent claim 1 is patentable under 35 U.S.C. §103(a) over Kamo, JP 2002241601. Since claims 3-6 depend from independent claim 1, claims 3-6 are patentable under 35 U.S.C. §103(a) over Kamo, JP 2002241601 for at least the reasons independent claim 1 is patentable under 35 U.S.C. §103(a) over Kamo, JP 2002241601.

B. In the Office Action, at pages 5-6, claims 1-2, 5-6, 8, 13-14 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Takada et al., JP 3-126538. The reasons for the rejection are set forth in the Office Action and therefore not repeated. The rejection is traversed and reconsideration is requested.

It is respectfully submitted that Takada teaches a resin sheet that comprises a resin varnish, in which a thermoplastic resin, triaryl isocyanurate, a flame retarder, a reaction initiator and a solvent are added to polyphenylene oxide and fillers (if necessary), and the resin sheet is attached to a release sheet of a plastic film such as polyethylene terephthalate film, polybutylene terephthalate film, polyimide film, polyphenylene sulfide film, fluoreoresin film, and cellulose

triacetate film, for example (see page 4 of the translation).

It appears that the Examiner may be confused as to the composition of the polyphenylene oxide on the release sheet - he argues that in accordance with the Application example (see translation, page 5, which recites that the resin varnish consists of 45 parts of polyphenylene oxide), "the Examples summarize compositions for which the polyphenylene oxide weight contribution is less than 50%" (see Office Action, page 5). However, the resin varnish is not part of the release sheet. In the present application, the mold-releasing film has a resin layer containing a polyphenylene ether-based resin in an amount of 50 wt% or more.

As is recited in independent claim 1, the polyphenylene ether-based resin in the mold releasing film of the present application is in an amount of 50 wt% or more. That is, Takada teaches a PPE film for the resin sheet and does not disclose a PPE film as a release film. In contrast, the present application discloses a mold releasing film containing a PPE-based resin. Hence, the mold releasing film of the present application is different from the release sheet of Takada.

Hence, it is respectfully submitted that independent claim 1 is patentable under 35 U.S.C. §103(a) over Takada et al., JP 3-126538. Since claims 2, 5-6, 8, 13-14 and 16 depend from independent claim 1, claims 2, 5-6, 8, 13-14 and 16 are patentable under 35 U.S.C. §103(a) over Takada et al., JP 3-126538 for at least the reasons independent claim 1 is patentable under 35 U.S.C. §103(a) over Takada et al., JP 3-126538.

ALLOWABLE SUBJECT MATTER:

In the Office Action, at page 6, claims 7 and 9-12 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants thank the Examiner for his careful review of the claims and his submission that claims 7 and 9-12 would be allowable if suitably amended. However, in view of the above amendments and arguments, it is respectfully submitted that claims 1-16 are in allowable form.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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